

WHAT IS CLAIMED IS:

1. A novel strain, *Phellinus linteus* Yoo KCTC 0399BP, which produces an immuno-stimulating polysaccharide substance and has a  
5 mitochondrial DNA 61kb in size.

2. A novel, natural immuno-stimulating substance, which is extracted and purified from the mycelium or fruiting body cultures of *Phellinus* spp.

3. A novel, natural immuno-stimulating substance as set forth in claim 2, wherein the substance consists of mannose, galactose and glucose.

4. A method for preparing a novel immuno-stimulating polysaccharide substance, comprising the steps of:

culturing *Phellinus* strains on media containing glucose, yeast extract and peptone to give mycelia or fruiting bodies;  
extracting the substance from the mycelia or fruiting bodies  
20 by hot water;

isolating the substance by precipitating in ethanol, suspending in water and dialyzing with a dialysis tube; and  
purifying the substance by sequentially executing DEAE-cellulose chromatography and gel chromatography.

5. A pharmaceutically acceptable composition of immuno-stimulating activity against cancer, comprising as an effective component the polysaccharide substance or its derivatives obtained from the mycelia or fruiting bodies of *Phellinus* spp.

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6. Use of the polysaccharide substance of claim 2 or 3 as an immuno-anticancer agent.

10 7. Use of the polysaccharide substance of claim 2 or 3 as an aid in the treatment of immune-related diseases including AIDS.